MET-PRO Corporation

Delaware Valley Industrial Resource Center

Met-Pro Corporation Reduces Inventory with Lean Transformation Initiative

Client Profile:
Met-Pro Corporation is a leading global manufacturer of product recovery and pollution control equipment for purification of air and liquids; fluid handling equipment for corrosive, abrasive and high-temperature liquids; and filtration and purification products. Met-Pro operates 11 plants, including eight in the U.S., and one each in Canada, Holland and China. The Harleysville, Pennsylvania facility employs 100 people.

Situation:
Met-Pro Chairman, CEO and President Ray De Hont was always looking for ways to simplify and improve his company. De Hont made the decision to pursue a Lean transformation as a way to enhance Met-Pro's ability to meet its ongoing objectives of quality, on-time delivery and low cost. "Our operating margins were good," he notes, "but we needed to sharpen our pencil. I've always been intrigued by moving things through quicker and doing only what adds value. Going Lean was a way to make our facilities more efficient, improve our cost basis, and drive down inventory." De Hont made the decision to work with the Delaware Valley Industrial Resource Center (DVIRC), a NIST MEP network affiliate, and introduce Lean throughout Met-Pro's Philadelphia-area locations.

Solution:
DVIRC began by performing Lean assessments at each of the facilities to determine the current state of operations and identify opportunities for improvement. This included a review of order processing, scheduling, setup, equipment changeovers, batching, inspection, inventory and other processes. Based on the assessments, the Fybroc and Sethco fluid handling plant was selected as the first facility to undergo a Lean transformation. To achieve commitment and buy-in, both management and plant employees participated in a Lean overview, an introductory presentation of Lean processes, tools and benefits. Selected employees attended Lean 101 workshops which provided a more detailed understanding of Lean principals and methods. Value Stream Mapping was then performed on all of the plant production lines to determine the current process state, and goals were set for a more efficient future state.
To move processes towards future-state objectives, employees participated in Kaizen events -- goal-oriented work groups focused on achieving specific reductions in the time, effort, materials and systems used to complete a task or process. Through the Kaizen events, many of the work, assembly and process areas were reorganized for maximum efficiency using visual management methods including labeling, signs, shadow boards, racks and other tools. To enhance work flow and reduce stock inventories, Kanban pull systems were implemented to control the flow of production based on actual order demand, rather than anticipated demand. Manufacturing and assembly processes were transformed from batch production methods to cellular setups incorporating more efficient, one-piece flow methods focused on the production of one complete part before moving on to the next.

In one machining area, a test was performed to determine possible improvements of moving from a batch production method to a one-piece flow. The results showed that production time could be reduced 30 percent using a one-piece process. In addition, Met-Pro operators realized that the continuous flow method allowed them to catch mistakes one at a time, instead of after making multiple parts -- reducing time and costs, while improving improved product quality. The square footage of a resin-transfer molding (RTM) process was reduced 37 percent and lead times were reduced 44 percent through the development of an improved work flow and Kanban pull system. A setup reduction Kaizen in the CNC machining area indicated a potential reduction in setup time of 15 percent.

From the beginning, De Hont stressed the importance of management commitment and employee empowerment in driving Lean success. Leading by example, Ray attended DVIRC's Lean Level 1 Certification course, as are his head of procurement and logistics, plant managers, foreman, assistant foremen and others. DVIRC's unique approach combines Lean methods with individual and team-based learning, empowering employees to identify opportunities for continuous improvement. Based on positive improvements in the initial Lean work, Met-Pro has begun introducing Lean methodologies to its Strobic Air facility, with work now focused on fan and plenum assembly processes. In addition, Met-Pro plans to introduce Lean to its facilities in Michigan and Indianapolis, and eventually to all office, engineering, project management and sales operations. DeHont said, "We've dramatically improved the organization of our plant floor and eliminated the abuse of floor space. The difference by following Lean methods is like night and day. Using Lean methodologies makes us a stronger company."

Results:

* Increased productivity by 25 to 30 percent.
* Reduced inventory by $3 million.
* Reduced lead time by 44 percent.

Testimonial:

"DVIRC is more interested in how to get you to the point where you understand the Lean philosophy and methods. They guide you until you have the capability to grow on your own."

Ray DeHont , CEO and President